CLAIMS

What is claimed is:

1. A method for synchronizing to a forward channel in a CDMA system, comprising the steps of:

despreading a received CDMA signal with a first pn code that is known not to be present in the received CDMA signal and obtaining a measure of received signal level; and

using the obtained measure of the received signal level when setting a phase of a second pn code that corresponds to a desired forward channel that is to be received.

2. A method as set forth in claim 1, wherein the step of despreading despreads a null channel, and wherein the desired forward channel is a continuously transmitted side-channel.

3. A method as set forth in claim 1, wherein the step of obtaining a measure of received signal level obtains a correlation null.

4. A method as set forth in claim 1, wherein the steps of despreading and obtaining are accomplished iteratively over a range of first pn code phase states.

5. A method for acquiring a forward channel in a point-to-multipoint CDMA system, comprising the steps of:

despreading a received CDMA signal with a first pn code that is known to be present in the received CDMA signal and obtaining a first measure of received signal level;

despreading the received CDMA signal with a second pn code that is known not to be present in the received CDMA signal and obtaining a second measure of received signal level; and

synchronizing to a desired channel using a difference between the first and second signal levels.

6. A method as set forth in claim 5, wherein the first step of despreading despreads a continuously transmitted side-channel, and wherein the step of synchronizing synchronizes to the side-channel.

7. A method as set forth in claim 5, wherein the step of obtaining a first measure of received signal level obtains a correlation peak, wherein the step of obtaining a second measure of received signal level obtains a correlation null.

8. A method as set forth in claim 5, wherein the steps of despreading and obtaining are accomplished iteratively over a range of first pn code phase states and over a range of second pn code phase states.

9. A method as set forth in claim 5, wherein the steps of despreading and obtaining are accomplished iteratively over a plurality n of first pn code phase states and over a plurality n of second pn code phase states, and further comprising the steps of:

for a pn phase state i of the plurality n of first and second pn code states,

determining a difference value between the first measure of received signal level and the second measure of received signal level;

comparing the difference value to a threshold value; and

if the difference value is greater than the threshold value, setting a pn code generator to output a pn code corresponding to the desired channel, the outputted pn code being set at the pn phase state i;

else, if the difference value is not greater than the threshold value, incrementing the pn phase state i and re-executing the steps of despreading and obtaining.

10. A method as set forth in claim 9, wherein if none of the n difference values are greater than the threshold value, further comprising the steps of resetting i to an initial value and re-executing the steps of despreading and obtaining.

11. A method as set forth in claim 10, and further comprising a step of adjusting the threshold value prior to re-executing the steps of despreading and obtaining.

12. A method as set forth in claim 9, wherein the step of determining the difference value includes a step of storing the determined difference value, and if none of the n difference values are greater than the threshold value, further comprising the steps of:

examining the stored difference values to select a stored difference value that has a largest value; and

setting the pn code generator to output the pn code corresponding to the desired channel, the outputted pn code being set to a pn phase state that corresponds to the selected stored difference value.

13.   A   synchronous   CDMA   communications   system, comprising:

at least one radio base unit (RBU) comprising means for transmitting a plurality of first forward channels, individual ones of said first forward channels being intended for receipt by one subscriber, and for transmitting at least one second forward channel that is intended for receipt by a plurality of subscribers, each of said forward channels being spread with an associated pn code that has an orthogonal relationship to associated pn codes of the other forward channels; and .

a plurality of subscriber units (SUs) individual ones of which comprise means for receiving the plurality of first forward channels and the at least one second forward channel, individual ones of said SUs further comprising means for despreading the at least one second forward channel, using a first pn code associated with the second forward channel, and for obtaining a first measure of received signal level; individual ones of said SUs further comprising means for despreading the received forward channels using a second, null pn code that is not transmitted by the RBU and for obtaining a second measure of received signal level, said null pn code having an orthogonal relationship to the transmitted pn codes; and further comprising means for setting a phase of the first pn code associated with the second forward channel using a difference between the first and second measures of signal level.

14. A CDMA communications system as set forth in claim 13, wherein said means for obtaining a first measure of received signal level obtains a correlation peak, and wherein said means for obtaining a second measure of

received signal level obtains a correlation null.

15. A CDMA communications system as set forth in claim 13, wherein said means for despreading and obtaining operate iteratively over a range of first pn code phase states and over a range of second pn code phase states.

Add A'

add B'